CLAIMS

1. A printing system receiving input data for printing images on a print media, comprising:

an inkjet printhead having a body and ink ejection devices located on a substrate; and

a nozzle member attached to the body and including a controller that uses the input data to optimize the temperature operating range for printing of pigmented ink.

2. The printing system of claim 1, wherein the pigmented ink is printed over large print swaths with a high throughput.

3. The printing system of claim 1, wherein the controller is at least one of an integrated circuit processor, a printer driver or firmware.

4. The printing system of claim 3, wherein the controller controls an increase in the mean temperature of the substrate through a feedback loop.

5. The printing system of claim 4, wherein the feedback loop activates heating elements associated with the ink ejection elements.

6. The printing system of claim 1, further comprising a programmable feedback loop that increases a baseline temperature of the substrate before printing the pigmented ink.

7. The printing system of claim 6, wherein the programmable feedback loop decreases a temperature differential between the baseline temperature and the mean temperature of the substrate.

8. The printing system of claim 1, wherein the controller receives temperature data from a digital temperature sensor before printing begins, compares the temperature data with a set point for printing, and initiates

heating elements associated with the ink ejection elements if the temperature data is below a printing threshold.

9. The printing system of claim 8, wherein the controller turns off the heating elements when the threshold temperature of the substrate has been reached.

10. The printing system of claim 8, wherein the set point temperature for black pigmented ink is 40 degrees Celsius and for color pigmented ink is 45 degree Celsius.

11. A method for printing images on a print media from a printing system having heating elements located on a substrate, the method comprising:

receiving a temperature of the substrate before printing begins;

comparing the temperature with a set point for printing;

initiating the heating elements if the temperature is below a predetermined printing threshold; and

turning off the heating elements when the threshold temperature of the substrate has been reached.

12. The method of claim 11, further comprising maintaining a mean temperature of the substrate at a temperature that is within a predefined range of an optimal temperature for the production of a droplet of ink.

13. The method of claim 12, further comprising controlling temperatures of specific sections of the substrate and a baseline temperature of ink ejection nozzles associated with the respective sections.

14. A large array inkjet printing apparatus that prints pigmented ink, comprising:

a monolithic substrate defining a printhead;

a large array of ink ejection elements formed on the substrate;

and

a nozzle member coupled to the substrate and including a controller that optimizes a temperature operating range for printing the pigmented ink.

15. The large array inkjet printing apparatus of claim 14, wherein the controller receives temperature data from a digital temperature sensor before printing begins, compares the temperature data with a set point for printing, and initiates heating elements associated with the ink ejection elements if the temperature data is below a printing threshold.

16. The large array inkjet printing apparatus of claim of claim 13, wherein the controller controls an increase in the mean temperature of the substrate through a feedback loop.

17. The large array inkjet printing apparatus of claim 16, wherein the feedback loop activates heating elements associated with the ink ejection elements.

18. The large array inkjet printing apparatus of claim 13, further comprising a programmable feedback loop that increases a baseline temperature of the substrate before printing the pigmented ink.

19. The large array inkjet printing apparatus of claim 18, wherein the programmable feedback loop decreases a temperature differential between the baseline temperature and the mean temperature of the substrate.

20. The large array inkjet printing apparatus of claim of claim 13, wherein the controller controls temperatures of specific sections of the substrate and a baseline temperature of ink ejection nozzles of the nozzle member associated with the respective sections.